IN THE CLAIMS

Please amend the claims as follows:

1. (original) A method of constructing a model of a composite structure for estimating parameters of the model with respect to an N-dimensional signal, $N \geq 2$, in particular for segmenting a medical image; the method including:

constructing a plurality of constituent models, each constituent model corresponding to a respective predetermined constituent structure and being designated for estimating parameters of the constituent model with respect to the N-dimensional signal based on respective prior knowledge of the constituent structure, at least two of the constituent models being based on differing technologies; and each constituent model being provided with a uniform, predetermined interface for controlling the constituent model and for retrieving parameters estimated by the constituent model; and

constructing the model by determining at least two constituent structures that are incorporated in or related to the composite structure and forming the composite model based on respective constituent models that correspond to the respective determined constituent structures; the model being operative to control the constituent models, to retrieve estimated parameters

from the constituent models and to estimate parameters of the model in dependence on the retrieved parameters.

2. (original) A method as claimed in claim 1, wherein the constituent model is a primitive model corresponding to a respective predetermined primitive structure in the N-dimensional signal and being designated for estimating the model parameters solely based on prior knowledge of the primitive structure without using further models for estimating parameters of the model with respect to the signal.

3. (original) A method as claimed in claim 1, wherein the constituent model is a composite model corresponding to a further composite structure for estimating parameters of the composite model with respect to the N-dimensional signal by determining at least two of the constituent structures that are incorporated in or related to the further composite structure and forming the composite model based on respective constituent models that correspond to the respective determined constituent structures; the composite model being operative to control the constituent models, to retrieve estimated parameters from the constituent models and to estimate parameters of the composite model in dependence on the retrieved parameters.

4. (original) A method as claimed in claim 1, wherein the constituent model is a spring model for modeling a relative position of at least two constituent models of the model with respect to each other.

5. (original) A method as claimed in claim 4, wherein the spring model is operative to represent at least one of the following:
- distance between the at least two constituent models;
- angle between the at least two constituent models;
- relative scale between the at least two constituent models.

6. (original) A method as described in claim 1, wherein the interface enables setting at least one of the following parameters of a corresponding model:
- position of the model,
- scale of the model,
- orientation of the model.

7. (original) A method as claimed in claim 1, wherein the interface enables instructing a corresponding model to perform at least one of the following operations:
- optimizing a fit of the model to the signal,

- calculating a measure of fitting of the model to the signal,
- determining a boundary of the model in the signal.

8. (original) A method as claimed in claim 1, wherein the interface enables obtaining at least one of the following output information of a corresponding model:
- position of the model,
- scale of the model,
- orientation of the model,
- a measure of fitting of the model,
- a boundary of the model.

9. (original) A computer program product for causing a processor to perform the method of claim 1.

10. (original) A method of estimating parameters of a model of a composite structure with respect to an N-dimensional signal, N≥2, in particular for segmenting a medical image; the method including:

using a composite model of the composite structure that is based on a plurality of constituent models that each correspond to a respective predetermined constituent structure in the N-dimensional signal and that are incorporated in or related to the composite structure; each constituent model being designated for

estimating parameters of the constituent model with respect to the N-dimensional signal based on respective prior knowledge of the constituent structure, at least two of the constituent models being based on differing technologies; and each constituent model being provided with a uniform, predetermined interface for controlling the constituent model and for retrieving parameters estimated by the constituent model;

controlling the constituent models to estimate parameters of the constituent model;

retrieving estimated parameters from the constituent models; and

estimating parameters of the model in dependence on the retrieved parameters.

11. (original) A method as claimed in claim 10, wherein the constituent model is a primitive model corresponding to a respective predetermined primitive structure in the N-dimensional signal and being designated for estimating the model parameters solely based on prior knowledge of the primitive structure without using further models for estimating parameters of the model with respect to the signal.

12. (original) A method as claimed in claim 10, wherein the constituent model is a composite model corresponding to a further composite structure for estimating parameters of the composite model with respect to the N-dimensional signal by determining at least two of the constituent structures that are incorporated in or related to the further composite structure and forming the composite model based on respective constituent models that correspond to the respective determined constituent structures; the composite model being operative to control the constituent models, to retrieve estimated parameters from the constituent models and to estimate parameters of the composite model in dependence on the retrieved parameters.

13. (original) A method as claimed in claim 10, wherein the constituent model is a spring model for modeling a relative position of at least two constituent models of the composite model with respect to each other.

14. (currently amended) A method as claimed in any one of the claim 10~~, 11, 12, or 13~~, wherein the step of retrieving estimated parameters from the constituent models includes retrieving a measure of fitting of each constituent model; and wherein the step of estimating parameters of the model includes calculating a

measure of fitting of the model in dependence on the retrieved measures of fitting of the constituent models and on a contribution of the composite model.

15. (currently amended) A method as claimed in claim 10~~, 11, 12, or 13~~, wherein each constituent model of the composite model is operative to adjust a fitting to the signal in response to an instruction via its interface; the method including optimizing a fitting of the model to the signal by instructing each constituent model to adjust its fitting to the signal.

16. (original) A method as claimed in claim 15, wherein the step of instructing each constituent model to adjust its fitting includes selecting a first one of the constituents models; instructing the first constituent model to optimize its fitting; and sequentially instruct other ones of the constituent models to optimize their fitting with respect to the already optimally fitted constituent model(s).

17. (original) A method as claimed in claim 15, wherein the step of optimizing a fitting of the model to the signal includes:

adjusting a position, orientation and/or scale of the composite model; and

for each of the constituent models:

determine derivative adjustments in a position, orientation and/or scale of the constituent model;

instructing the constituent model to perform the adjustment; and

retrieve a measure of fitting of the constituent model; and

calculating a measure of fitting of the model.

18. (original) A method as claimed in claim 15, wherein the step of optimizing a fitting of the model to the signal includes:

for each constituent model:

instructing the constituent model to optimally adjust a position, orientation and/or scale of the constituent model; and

retrieving position, orientation, and/or scale information from the constituent model; and

determining position, orientation, scale and/or deformation of the model from the retrieved information; and

calculating a measure of fitting of the model.

19. (original) A method as claimed in claim 15, the step of optimizing a fitting of the model to the signal includes:

for each constituent model:

instructing the constituent model to optimize its fitting to the signal; and

retrieving position, orientation, scale and/or deformation information from the constituent model; and

determining position, orientation, scale and/or deformation of the model from the retrieved information; and

calculating a measure of fitting of the model.

20. (original) A computer program product for causing a processor to perform the method of claim 10.

21. (original) An apparatus for estimating parameters of a model of a composite structure with respect to an N-dimensional signal, $N \geq 2$, in particular for segmenting a medical image; the apparatus including:

an input for receiving the N-dimensional signal;

a storage for storing a composite model of the composite structure that is based on a plurality of constituent models that each correspond to a respective predetermined constituent structure in the N-dimensional signal and that are incorporated in or related to the composite structure; each constituent model being designated for estimating parameters of the constituent model with respect to

the N-dimensional signal based on respective prior knowledge of the constituent structure, at least two of the constituent models being based on differing technologies; and each constituent model being provided with a uniform, predetermined interface for controlling the constituent model and for retrieving parameters estimated by the constituent model;

a processing system for estimating the parameters by:

controlling the constituent models of the composite model to estimate parameters of the constituent model;

retrieving estimated parameters from the constituent models; and

estimating parameters of the model in dependence on the retrieved parameters;

and

an output for outputting the estimated parameters.